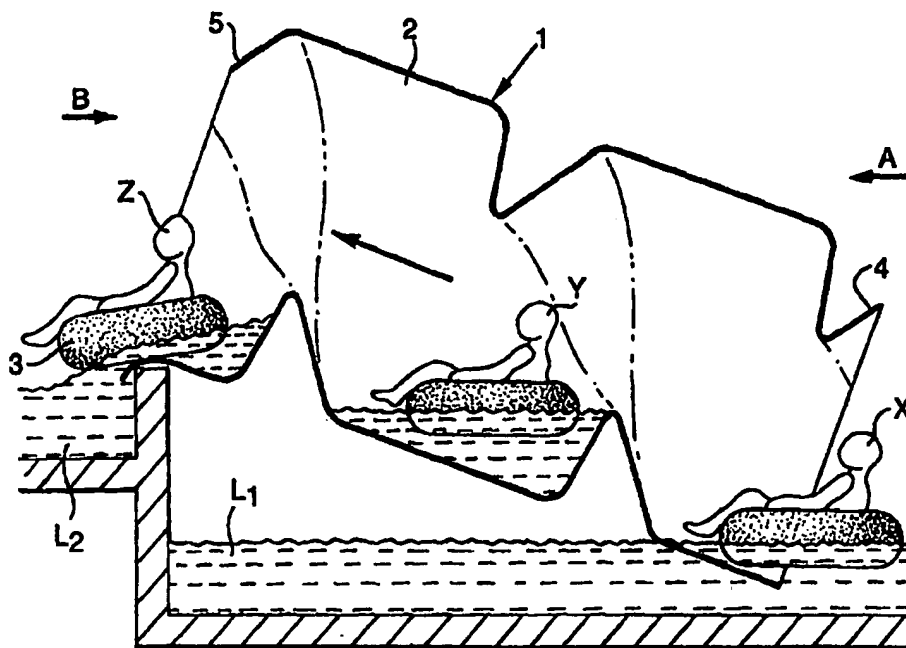




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification<sup>6</sup> : <b>A63G 21/18, 29/02, 3/02</b></p>	<p><b>A1</b></p>	<p>(11) International Publication Number: <b>WO 98/45006</b> (43) International Publication Date: <b>15 October 1998 (15.10.98)</b></p>
<p>(21) International Application Number: <b>PCT/GB98/01008</b> (22) International Filing Date: <b>6 April 1998 (06.04.98)</b> (30) Priority Data: <b>9706973.6</b>      <b>5 April 1997 (05.04.97)</b>      <b>GB</b> (71)(72) Applicants and Inventors: <b>STUART, Alexander</b> [GB/GB]; Summer Cottage, Stud Farm, Newhaven, Sussex BN9 0EF (GB). <b>CUTTELL, David, John</b> [GB/GB]; The Hollies, Hempstead Lane, Hailsham, East Sussex BN27 3NP (GB). (72) Inventor; and (75) Inventor/Applicant (for US only): <b>OLIVE, Philip, John</b> [GB/GB]; 50 Ingrams Way, Hailsham, East Sussex BN27 3NP (GB). (74) Agents: <b>SHACKLETON, Nicola et al.; Page White &amp; Farrer,</b> <b>54 Doughty Street, London WC1N 2LS (GB).</b></p>		<p>(81) Designated States: <b>AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</b>  <b>Published</b> <i>With international search report.</i></p>

(54) Title: A WATER RIDE



(57) Abstract

A water ride for use in a leisure park comprising an inclined hollow rotating tube (1) having an internal screw thread (2). The first end (4) of the tube is at a lower water level (L<sub>1</sub>) and the second end (5) of the tube is at a higher water level (L<sub>2</sub>). Accordingly, a user entering the tube (1) at one level can be carried to the other level by a body of water moving along the internal screw thread (2) as the tube (1) rotates about its axis.

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A WATER RIDE

The present invention relates to a water ride, in particular, a water ride for use in a leisure park.

Water rides which move a user from an upper level to a lower level are well-known in the leisure industry. Such water rides take the form of slides or flumes where the user is carried downhill both by the flow of water and gravity. However, once a user has descended by various routes to the lower levels of a water park, which is a combination of a number of different water rides, the only means of ascending to the upper levels is by way of a traditional stairway or ladder. An object of the present invention is, therefore, to overcome this disadvantage of the current water rides.

Accordingly, there is provided a water ride for use in a leisure park comprising an inclined hollow rotating tube having a screw thread on its internal surface, the first end of the tube being at a lower water level and the second end of the tube being at a higher water level wherein a user entering the tube at one level will be carried to the other level by a body of water moving along the internal screw thread as the tube rotates about its axis.

Preferably, a user is carried by the body of water moving along the internal screw thread by a floating carrying means.

Preferably, the hollow tube is constructed such that the configuration of the internal screw thread provides an unobstructed central area to allow a clear view through the hollow tube.

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A preferred embodiment of the present invention will now be described in detail, by way of example only, with reference to the accompanying drawings, of which:

Figure 1 is a side view in section of the water ride;  
Figure 2 is a plan view of the water ride in Figure 1;  
Figure 3 is an end view in direction A in Figure 1 of a user entering the water ride; and

Figure 4 is an end view in direction B in Figure 1 of a user exiting the water ride.

Figure 1 depicts three users X, Y and Z ascending from a lower water level  $L_1$  to a higher water level  $L_2$ . The water ride comprises an inclined hollow rotating tube 1 having an internal screw thread 2. The tube 1 should be constructed such that the depth of the screw thread 2 is sufficient to carry a body of water which can support a user with or without a floating carrying means 3 such as a tyre. The first end 4 of the tube 1 is submersed in the water at water level  $L_1$  and the second end 5 of the tube 1 allows water carried by the internal screw thread 2 to empty into water level  $L_2$ . It is clear from Figure 1 that the water ride will operate in a similar manner to an Archimedes' screw when the tube 1 is rotated [clockwise about its axis when viewed in direction A] to lift the user from water level  $L_1$  to water level  $L_2$  on the body of water moving along the internal screw thread 2. If the direction of rotation is reversed, a user can descend from water level  $L_2$  to water level  $L_1$ . However, the second end 5 of the tube 1 would have to be submersed in water level  $L_2$  if both ascent and descent by the water ride is a requirement.

Figure 2 is a plan view of the water ride and Figures 3 and 4 depict the entry and exit of a user from the water ride. In Figure 3 it will be seen that there is a central

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hollow area which is not obstructed in any way by the configuration of the screw thread 2 in order that there is a clear view through the tube 1. This feature will improve safety aspects of the water ride and facilitate evacuation should the water ride break down during use.

The hollow tube 1 can be made to different dimensions thereby varying the number of users. However, the depth of the internal screw thread 2 must be sufficient to carry a body of water which will support the user. The angle of inclination of the hollow tube 1 can also be varied to suit location requirements.

The hollow tube 1 will be mounted on standard thrust bearings (not shown) and rotated using a standard electric motor (not shown) or other equivalent power means. Typically, the hollow tube 1 would be manufactured using traditional moulding techniques, the most economical material being glass reinforced plastic.

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**CLAIMS:**

1. A water ride for use in a leisure park comprising an inclined hollow rotating tube having a screw thread on its internal surface, the first end of the tube being at a lower water level and the second end of the tube being at a higher water level wherein a user entering the tube at one level will be carried to the other level by a body of water moving along the internal screw thread as the tube rotates about its axis.

2. A water ride as claimed in Claim 1, wherein a user is carried by the body of water moving along the internal screw thread by a floating carrying means.

3. A water ride as claimed in Claim 1 or Claim 2, wherein the hollow tube is constructed such that the configuration of the internal screw thread provides an unobstructed central area to allow a clear view through the hollow tube.

4. A water ride for use in a leisure park substantially as herein described with reference to the accompanying drawings.

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Fig.1.

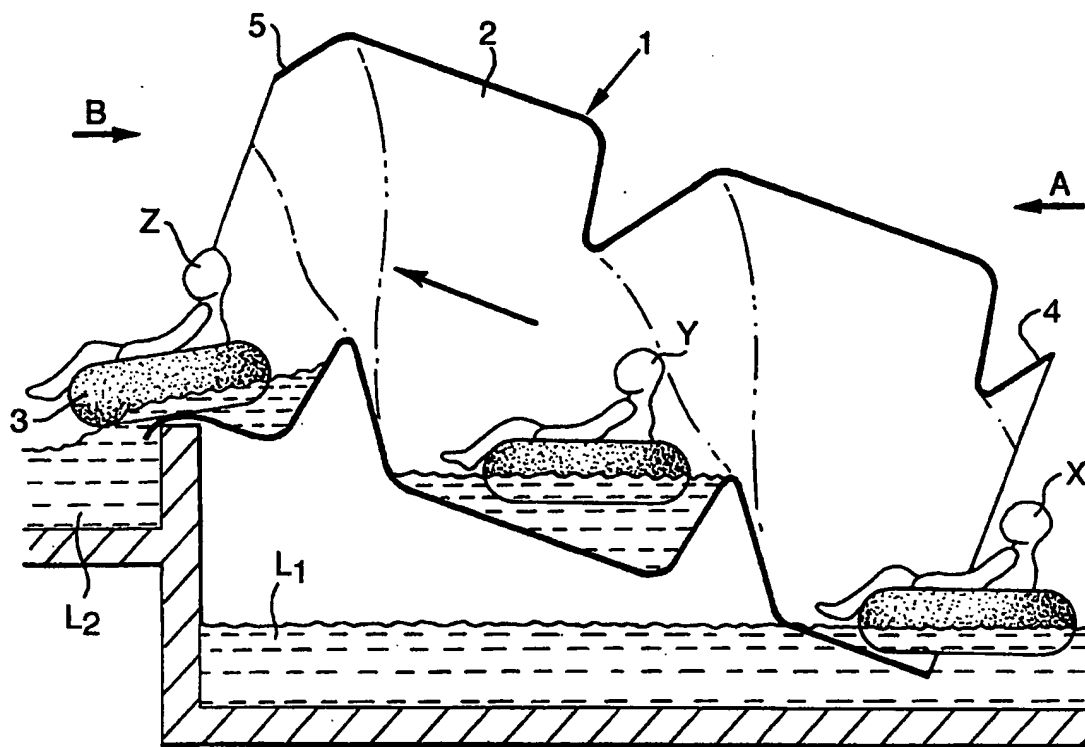
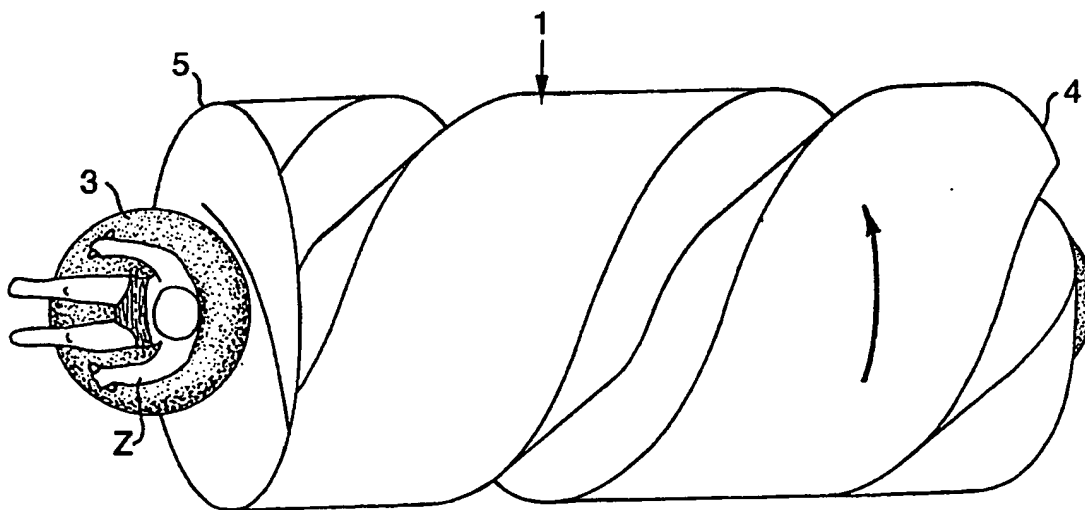


Fig.2.



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Fig.3.

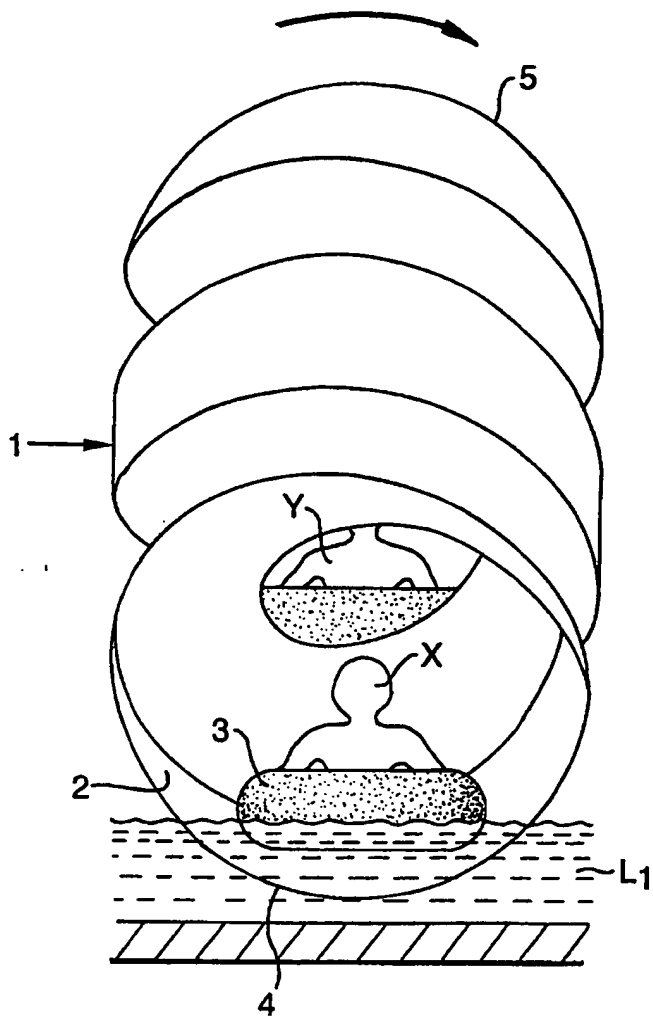
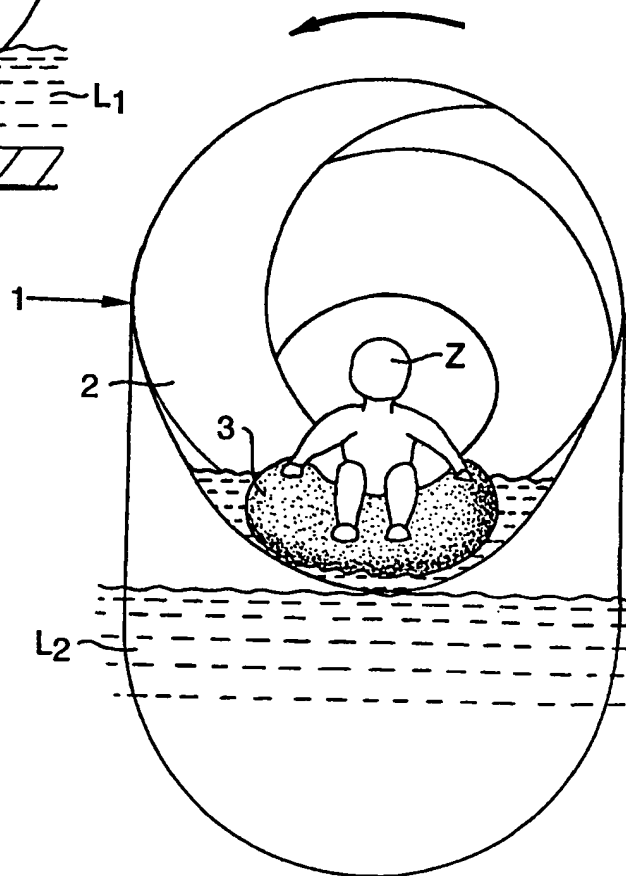


Fig.4.





# INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 98/01008

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 A63G21/18 A63G29/02 A63G3/02

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A63G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 433 671 A (DAVIS WALTER D) 18 July 1995 see the whole document ---	1-4
A	DE 295 18 009 U (FAB FREIZEIT ANLAGEN BAU SARL) 25 April 1996 see page 2, line 15 - line 22; figures ---	1-4
A	DE 430 353 C (FISCHER) 10 April 1925 see the whole document -----	1-4

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Date of the actual completion of the International search

26 June 1998

Date of mailing of the International search report

06/07/1998

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DE 29518009 U	25-04-1996	NONE	
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